# BEST PRACTICES FOR WATER QUALITY TRADING
# JOINT REGIONAL STATEMENT

## Discussion Guide, November 12th, 2013

This Discussion Guide is intended to provide definitions, context, analysis, and options for addressing various components of Baseline in water quality trading programs. It poses questions that will be discussed at the fourth interagency workshop. This document may reference other trading programs, examples, or documents. This document will be included in the workshop packet and posted online following the workshop.

This Discussion Guide includes two components. The first is a memo, drafted by The Freshwater Trust, defining and interpreting the concept of a trading "Baseline." The second component is a draft best practice that outlines various Baseline & Additionality requirements. The draft best practices and associated commentary are based on discussion at the previous workshops, as well as subsequent research and analysis conducted by the project team. There are areas where the language included in the below draft best practice goes beyond the discussions held with agency participants. These additions are offered as suggestions to move the conversation forward and will be refined or removed through future review and comments.

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# Memo on Baseline Regulatory Framework

**To**: JRA Participants (Idaho DEQ, Oregon DEQ, Washington Ecology, EPA Region 10)

**From**: The Freshwater Trust

**Date**: November 11, 2013

**Re**: Regulatory and TMDL-Derived Baseline

In water quality trading programs, determining what constitutes "Baseline" (the minimum practice(s) a nonpoint source is required to meet before trading) is one of the most complex questions that must be answered, especially where a TMDL exists. Throughout this document, two terms are used to define Baseline: 1) "Regulatory Baseline," those actions already required by federal, state, and local laws, regulations, ordinances; and 2) "TMDL-Derived Baseline," or the uplift that *may* already be required by TMDL implementation plans. Together, these elements inform the threshold portion that nonpoint sources must meet prior to generating credits to trade.

This memorandum delves deeply into the law and policy surrounding the Baseline question, and provides the support for the Baseline-related Draft Best Practice that will be included in the Joint Regional Statement appendices. **Section A** of this memo introduces the applicable regulatory documents, and discusses the four key issues that often cause confusion regarding how Baseline is calculated at individual project sites. **Section B** then walks through the mechanics of calculating the total number of tradable credits sold from a site, including how Regulatory and TMDL-Derive Baseline are deducted from "Net Uplift" (the net environmental benefit from trading, calculated by subtracted pre-project site performance from post-project site performance). **Section C** discusses how to identify the Regulatory and TMDL-Derived Baseline obligations that may be applicable to project sites by first discussing the nature and scope of Regulatory Baseline, and then analyzing the amount of Net Uplift that may be subtracted from a nonpoint source site by a TMDL, if any. Specific to TMDL-Derived Baseline, this memo also describes how there is often a lack of clarity related to TMDL-Derived Baseline because of: a) the varying interpretations of TMDL load allocations (LAs) from overall, long-term TMDL objectives; b) the confusion stemming from the statements included in the 2003 EPA Trading Policy and 2007 EPA Toolkit regarding Baseline and TMDL LAs; c) the confusion around time horizons for achieving TMDL objectives versus TMDL-Derived Baseline for trading; and d) the fact that the sequencing of TMDL implementation is governed by state agency discretion as to when and how particular BMP actions will be required in order to meet the long-term goals identified in TMDLs. Lastly, **Section D** applies the Regulatory and TMDL-Derived Baseline framework outlined in Sections A – C to the participating states of Idaho, Oregon, and Washington given the states' current regulatory frameworks.

## A. Introduction

The 2003 EPA Trading Policy requires that nonpoint sources meet "Baseline" requirements prior to trading. EPA has stated that "the Baseline for nonpoint sources should be the level of pollutant load

associated with existing land uses and management practices that comply with applicable state, local or tribal regulations."[1] Put another way, EPA stated in its Trading Toolkit that Baseline is equal to "the pollutant control requirements that apply to a buyer and seller in the absence of trading."[2]

In a basin where there is no TMDL, EPA is clear that Baseline is the applicable state, local and tribal regulations.[3] However, where there is a TMDL, there is a lack of clarity as to how Baseline is calculated at individual project sites. First, this is due in part to varying interpretations of load allocations (LAs). Second, this is influenced by the misperception that the 2003 EPA Trading Policy and the 2007 EPA Trading Toolkit state that Baseline is *equal* to LAs, when in fact they do not:

- The 2003 EPA Trading policy states that "where a TMDL has been approved or established by EPA, [… the] nonpoint source load allocation *would establish* the Baselines for generating credits."[4]
- The more recent EPA Permit Writer's Toolkit allows for similar flexibility, stating: "Baseline for a nonpoint *can be derived* from a load allocation (LA) established under a total maximum daily load (TMDL)."[5]

Third, this lack of clarity stems from confusion around time horizons for achieving TMDL objectives versus the thresholds nonpoint source must meet prior to trading. Finally, the sequencing of TMDL implementation is governed by state as to when particular actions are required in order to meet long-term TMDL goals. Establishing whether, and how, Baseline is derived from a TMDL, is best understood by walking through the application of Baseline to individual project sites. Doing this requires an understanding of the scientific process for calculating credits, the legal process of parsing through and applying different types of Baseline to the project site, and their role in calculating the total amount of tradable credits available from a nonpoint source site.

B. <u>How to Calculate the Total Tradable Credits from a Nonpoint Source Site</u>

Each project site can generate a certain number of credits. The question is which of those credits can be sold, and which are already required (i.e., not additional). Put simply, this equation is as follows:

> *Total Tradable Credits from a Nonpoint Source Site = (Net Uplift – Regulatory Baseline – TMDL-Derived Baseline).*

This equation is calculated through a two-step process, described below.

*1. Identify Net Uplift at Project Site*

The first step in calculating the total number of credits that can be sold from a project site is to determine the "Net Uplift" (i.e., the environmental benefit), which is calculated by subtracting the

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[1] EPA, Trading Toolkit, at 5.
[2] *Id.* at 8.
[3] *Id.* at 8
[4] EPA, 2003 Trading Policy, 68 Fed. Reg. at 1610 (emphasis added).
[5] EPA, Trading Toolkit, at 8 (emphasis added).

amount of pollution that would occur at a site with no restoration ("Pre-Project Site Performance," which is based on pre-project site conditions) from the amount of pollution that would occur at a site after restoration work is complete and mature ("Post-Project Site Performance"). Expressed as an equation:

*Net Uplift (Credits) = (Post-Project Site Performance) - (Pre-Project Site Performance).*

*2. Reduce Net Uplift by Regulatory and/or TMDL-Derived Baseline*

The second step is to reduce the Net Uplift by Baseline, which can be split into two types: 1) the uplift on an individual site attributable to Regulatory Baseline and, 2) where a TMDL exists, the uplift any TMDL implementation plans that may be attributable to TMDL-Derived Baseline. The distinction between these two types of Baseline is rooted in the 2003 EPA Trading Policy: "the Baselines for generating pollution reduction credits should be derived from and consistent with water quality standards. The term pollution reduction credits ('credits'), as used in this policy, means pollutant reductions greater than *those required by a regulatory requirement or established under a TMDL*."[6] Once these adjustments have been made to Net Uplift, the nonpoint source project developer can sell the remaining credits.

C. Identifying the Regulatory and TMDL-Derived Baseline Obligations Applicable to Project Sites

The scope of Regulatory Baseline can be identified by locating state and local statutes, regulations, and ordinances that apply to the project site in question, and determining whether any *affirmative* obligations to restore apply at a site, or whether any applicable regulations preventing site disturbance ("non-disturbance" regulations) require a site to be in a condition now that would otherwise be the final condition after credit-generating work. The scope of TMDL-Derived Baseline is often where the majority of discussion centers because of the complex nature of TMDL development and implementation.

*1. Regulatory Baseline*

The types of regulations that constitute Regulatory Baseline are known, although not always easy to find or quantify for individual project sites. At some types of project sites, clear Regulatory Baseline requirements exist based on affirmative restoration obligations or non-disturbance regulations that require a site to be in a condition now that would be the final condition after credit generating restoration work. For example, the clear Regulatory Baseline requirements on Oregon forestland severely limit the amount of credits that can be sold from riparian forestland restoration. In particular, the nonpoint source must "grow and retain" a riparian buffer that conforms to width and stem density requirements.[7] Therefore, because a riparian forest buffer (of discrete width and with

[6] EPA, 2003 Trading Policy, 68 Fed. Reg. at 1610 (emphasis added).

[7] *See* Or. Admin. R. 629-640-0000(2). For example, on fish bearing streams, operators "shall retain" all understory vegetation within 10 feet of the high water level, all trees within 20 feet of the high water level, and all trees leaning over the channel. *Id.* 629-640-0100(2). Moreover, operators must retain downed wood in riparian management areas, at least 40 live conifer trees per 1000 trees, and trees/snags at least six inches or greater in DBH. *Id.* 629-640-0100(3)-(6).

particular density and basal size) would already be required on forestlands, any final sediment or thermal load reductions resulting from the required buffer would largely fall under the umbrella of Regulatory Baseline requirements, and so only pollution reduced from actions in excess of these width, density and basal size requirements—if any—would be creditable. At other types of project sites, however, the pre-existing requirements that fall under Regulatory Baseline do not provide easily quantifiable requirements, and instead rely on generic, often aspirational, narrative non-disturbance conditions, such as "shall retain" streamside vegetation, or "shall not impede" riparian vegetation.[8] These types of non-disturbance requirements do not require any restoration or retention actions of particular types of vegetation to particular levels, and so as long as those conditions are complied with (i.e., vegetation—such as grass or even blackberries—is not being removed, or cows are not impeding riparian area development), then Regulatory Baseline does not result in a reduction of the total tradable credits from nonpoint source sites. Regulatory Baseline obligations (if they exist in statute, rule and/or ordinance) applicable to the project site would apply regardless of whether a TMDL exists for the watershed.

*2. TMDL-Derived Baseline*

It is often unclear as to what amount of Net Uplift, if any, a TMDL requires to be deducted from the *Total Tradable Credits from a Nonpoint Source Site* amount. This lack of clarity is due to: a) the varying interpretations of TMDL load allocations (LAs) as related to overall, long-term TMDL objectives; b) the confusion as to what the 2003 EPA Trading Policy and 2007 EPA Toolkit state related to Baseline and TMDL LAs; c) the confusion around time horizons for achieving TMDL objectives versus TMDL-Derived Baseline for trading; and d) the fact that the sequencing of TMDL implementation is governed by state agency discretion as to when particular actions are required in order to meet the long-term goals identified in TMDLs.

*a. Clarifying the Meaning of LAs: The "Full Excess" and "Allowance" Interpretations*

There are two conflicting interpretations of the regulatory definition of load *allocations*, which according to CWA regulations represent "[t]he portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources[.]"[9] This lack of clarity as to the meaning of LAs stems largely from the fact that individual nonpoint sources are not typically given individual LAs (unlike point sources, which are assigned individual WLAs that are converted into permit limits), and because nonpoint source

[8] *See, e.g.,* Or. Admin R. 603-095-1440(3)(a) ("agricultural management of riparian areas *shall not impede* the development and maintenance of adequate riparian vegetation to control water pollution…") (emphasis added); Josephine Cnty. Oregon Rural Land Dev. Code § 72.040(B)(2) ("streamside vegetation that provides shading of the surface waters *shall be retained*[,]" except in certain narrowly prescribed, regulator-approved situations) (emphasis added).

[9] Load allocations (LA) represent "[t]he portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources. Load allocations are best estimates of the loading, which may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting the loading. Wherever possible, natural and nonpoint source loads should be distinguished." 40 C.F.R. § 130.2(g).

obligations are not clearly defined in many TMDL implementation plans (and are instead generally assigned to designated management agencies (DMAs)).

First, the "full excess load" interpretation views LAs as an assignment of responsibility to nonpoint sources to remedy excess loading not addressed through point source programs (i.e., that excess load = LAs = requirement that must be *met* prior to trading). Use of this interpretation would significantly limit or eliminate the room for trading in many TMDLs.[10] Some states have utilized the Full Excess Load interpretation,[11] although recent trading program assessments have highlighted that this approach is largely unworkable for trading.[12] As illustrated in the remainder of Section B, this interpretation of LAs is inconsistent with the logic underpinning the CWA regulatory structure, and conflating Excess and *allowable* pollution within the term "Load Allocation" creates confusion regarding the pollution reduction goals that nonpoint sources need to meet prior to trading.

Second, the "allowance" interpretation views load *allocations* as similar to wasteload *allocations* (i.e., an allowable amount of pollution by nonpoint sources, as is the case with WLAs that are *given* to point sources). This approach is also consistent with the commonly understood meaning of "allocations,"[13] and as outlined below, the CWA and its implementing regulations. Moreover, this interpretation often provides more room for water quality trading.

As articulated in the CWA and EPA regulations:

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[10] NWEA relied on this approach in its March 15, 2013 letter to EPA regarding the Medford permit when it suggested that there may be nothing left to trade. The NWEA letter did not suggest how to resolve this issue.

[11] *See e.g.,* Colorado Dep't of Public Health and Environment, Water Quality Control Division, Pollutant Trading Policy § VIII (2004) ("The baseline for un-permitted nonpoint sources of run-off other than agriculture should be either… A pollutant specific cap and [LA] specified in the [TMDL].") (listing this option among a set of options, with instruction to select the most restrictive option); Wisconsin Dep't of Natural Resources, Guidance No. 3800-2013-04, Guidance for Implementing Water Quality Trading in WPDES Permits § 2.7.3 (2013), *available at* http://dnr.wi.gov/topic/surfacewater/documents/WQT_guidance_Aug_21_2013signed.pdf ("The credit threshold for a [nonpoint source], which includes both agricultural sources and non-permitted urban sources, is set to reflect the load allocation (LA) from an approved TMDL.").

[12] Recently, the Ohio EPA, in responding to comments on changes to its WQT rules, rejected this option as too restrictive saying it would seem to preclude any point source-nonpoint source trading from happening, at least in the near term. Ohio EPA, Responsiveness Summary for the Initial Interested Party Draft: Response to Comments on OAC 3745-5-01 to -14, Response 3 to Comment 3: U.S. Environmental Protection Agency, Region 5, at 10–11 (2012) ("To require that a portion of these load reductions, which are only happening to generate credits for point sources, must go towards meeting the TMDL load allocation is going to make it more difficult for point source – nonpoint source trading programs to be successful … [T]o say that nonpoint source reductions cannot be used to generate credits in a TMDL watershed until the entire load allocation for the watershed is achieved would seem to preclude any point source – nonpoint source trading from happening – at least in the near term..."). An analysis of credit supply and demand in the Chesapeake Bay expressed similar concerns. *See* Pinchot Institute for Conservation, Nutrient Trading in the Chesapeake Bay Region: An Analysis of Supply and Demand, at 15 (2010) ("It is a common misconception that nutrient trading can help agriculture meet its obligations under a TMDL. In fact, the agricultural baselines of each program are (or will likely be) set at a level that is equal to the TMDL reduction goals, thus preventing agriculture from trading reductions that are needed to meet the agricultural sector's obligations under the TMDL.").

[13] Meriam Webster Dictionary, 3d. ed. (listing "allow" as a synonym for "allocate").

*TMDL = (WLAs + LAs [including Natural Background] + Margin of Safety)*.[14]

A TMDL is required where a waterbody is not implementing applicable water quality standards.[15] The TMDL is a mechanism for getting a waterbody to its "Loading Capacity,"[16] which is defined as the "[t]he greatest amount of loading that a water can receive without violating water quality standards."[17] "Excess Load" is therefore the amount of load above the Loading Capacity that is causing the water to violate water quality standards. Simply put:

*Current Conditions Requiring a TMDL = TMDL + Excess Load*[18]
or restated,
*Current Conditions Requiring a TMDL – Excess Load = TMDL*.

In this equation, Excess Load can thus not be part of the LAs (which is the allowable amount of pollution contributed by nonpoint sources in the TMDL equation) because it is on the other side of the "=" sign. However, in many current TMDLs, LAs are conflated with the responsibility attributed to nonpoint sources to remedy Excess Load (i.e. "nonpoint sources *need to meet* LAs"). According to that interpretation, the above equation is often expressed this way:

*Current Conditions Requiring a TMDL = TMDL*, which is expressed as *(WLAs + [LAs = <u>Excess</u>] + Natural Background + Margin of Safety).*

However, as is evident from the above equations, the Excess Load amount must be <u>distinct</u> from the TMDL amount, and therefore Excess Load (and the responsibility to remedy excess loading) is not part of TMDL LAs. Thus, nonpoint sources do not have to *meet* LAs; rather, they are *allowed* to discharge up to their LAs. If states do not wish to allow any nonpoint discharges, they should clearly articulate a "0" LA in the TMDL, and explicitly note that trading is a tool for nonpoint sources to begin addressing Excess Load. Excess Load, on the other hand, should clearly be identified as the gap between current conditions requiring a TMDL, and optimal future conditions when a TMDL is fully effective.

Importantly, this allowance approach is consistent with usage of the LA term in other sections of EPA's CWA regulations.[19] Moreover, because a TMDL is a "highly technical, specialized interstitial

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[14] A TMDL is "[t]he sum of the individual WLAs for point sources and LAs for nonpoint sources and natural background." 40 C.F.R. § 130.2(i). A TMDL is also supposed to include a margin of safety. 40 C.F.R. § 130.2(i); 33 U.S.C. § 1313(d)(1)(C). Numerous courts have upheld the division of WLAs and LAs within an overall TMDL cap as within the implementing agency's purview. *See, e.g.,* Anacostia Riverkeeper v. Jackson, 798 F. Supp. 2d 210, 248–49 (D.D.C. 2011); Dioxin/Organochlorine Ctr. v. Clarke, 57 F.3d 1517, 1520 (9th Cir. 1995).

[15] 33 U.S.C. § 1313(d).

[16] *See* 40 C.F.R. § 130.2(f), (i).

[17] *Id.* § 130.2(f).

[18] TMDL = (WLAs + LAs + Natural Background + Margin of Safety). *See supra* note 14.

[19] For example, EPA regulations state that no permit may be issued to a new source or discharger that will cause or contribute to a violation of water quality standards unless, among other things, "[t]here are *sufficient remaining pollutant load allocations to allow for* the discharge[.]" 40 C.F.R. § 122.4(i) (emphasis added). This provision suggests that LAs are allowances that are given out to sources—much as would be done for point sources—and that if all of the overall LA has

matter that Congress does not often decide itself, but delegates to specialized agencies to decide[,]"[20] EPA and implementing state agencies have discretion to interpret LAs in this way under the CWA implementing regulations. Therefore, TMDLs are plans that are meant to bridge the Excess Load gap and should not be reasonably expected to occur right away or be a prerequisite to trading.

*b. TMDL-Derived Baseline is Not Equal to Load Allocations; TMDL-Derived Baseline is Derived from LAs*

Understanding what LAs equal in the TMDL equation is important because the 2003 EPA Trading Policy and the 2007 EPA Permit Writer's Toolkit are often collectively referred to for the proposition that TMDL-Derived Baseline is *equal* to Load Allocations, even though neither document says so. The 2003 EPA Trading policy states that "where a TMDL has been approved or established by EPA, [… the] nonpoint source load allocation *would establish* the Baselines for generating credits."[21] The more recent EPA Permit Writer's Toolkit allows for similar flexibility, stating: "Baseline for a nonpoint *can* be derived from a load allocation (LA) established under a total maximum daily load (TMDL)."[22] Therefore, regardless of how one determines what a LA is—as discussed in the above subsection—the guiding documents from EPA do not call for Baseline to be equal to LAs. Rather, Baseline "*can* be derived from" whatever a load allocation actually is.

*c. TMDLs Model Long-Term Goals; WQT Is Not Required to Fulfill Those Goals Prior to Trading*

Unlike other provisions in the CWA,[23] the TMDL provision does *not* include any definitive timelines for achieving water quality standards. The only statutory requirement is that TMDLs "shall be established at a level necessary to implement the applicable water quality standards."[24] Not surprisingly, unless established pursuant to state mechanisms, [25] TMDLs do not include water quality standard attainment deadlines. Because TMDLs are long-term documents meant to outline a set of modeled circumstances that once achieved *at some point in the future*, will result in attainment of water quality standards, the ideal modeled TMDL scenario should not be thought of as a pre-requisite for trading at each site. For example, where TMDLs identify "system potential vegetation" or some other proxy as the goal for a TMDL,[26] the TMDL provides the flexibility to meet that goal in the future,

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been given away, then a new source cannot enter the waterway because there are no more *allowances* available to apportion.

[20] *See* Zuni Pub. Sch. Dist. v. Dep't of Educ., 550 U.S. 81, 90 (2007).

[21] EPA, 2003 Trading Policy, 68 Fed. Reg. at 1610 (emphasis added).

[22] EPA, Trading Toolkit, at 8 (emphasis added).

[23] *See, e.g.,* 33 U.S.C. § 1311(b).

[24] 33 U.S.C. 1313(d)

[25] *See, e.g.,* Wa. Dep't of Ecology, Snoqualmie River Basin Temperature TMDL, at 185 (2011) ("Ecology anticipates that if state and local coordination proceed as expected for increasing effective shade, required plantings to begin the reconditioning of riparian conditions will be achieved by 2021. Because of the time needed for trees to grow to a mature size and provide maximum shade and microclimate benefits, fully reaching TMDL goals will not be achieved until all trees reach their mature height. However, the majority of the shade that will be provided should be in place by 2071, when trees are 50 years old.").

[26] For example, the Rogue Basin TMDL in Oregon states that "[a]ttainment of the effective shade surrogate measures is equivalent to attainment of the nonpoint source heat load allocations. Rogue Basin TMDL, at 2-36. "It is recognized that

but not as a part of Baseline for all trading in the present. Of course, TMDLs could identify specific reductions to be achieved by specific dates,[27] in which case they would factor into TMDL-Derived Baseline for trades occurring after those dates. However, TMDLs are seldom structured that way.

*d. The Sequencing of TMDL Implementation is Governed by State Agency Discretion as to When Particular Actions Are Required In Order to Meet Long-Term TMDL Goals*

EPA does not have federal law authority to implement TMDLs, although EPA reviews and approves TMDLs drafted by state agencies. EPA did propose a new TMDL rule in 1999 related to implementation plans and reasonable assurances, but this rule was challenged and never implemented, and was formally withdrawn by EPA in 2003.[28] Thus, as noted by the Ninth Circuit, "TMDLs are primarily informational tools that allow the states to proceed from the identification of waters requiring additional planning to the required plans … *States must implement TMDLs only to the extent that they seek to avoid losing federal grant money; there is no pertinent statutory requirement otherwise requiring implementation of § 303 plans or providing for their enforcement*."[29]

The only relevant federal law related to TMDL implementation requires that water quality based effluent limitations (WQBELs) in NPDES permits are "*consistent with* the assumptions and requirements" of TMDL WLAs,[30] and similarly that NPDES permit limits control pollutants sufficiently to prevent incursions above applicable water quality standards.[31] Implementation of TMDLs thus falls to states, and any sub-agencies within those states.

Most state water quality agencies rely on a series of "designated management agencies" (DMAs) to implement TMDLs. DMAs are the entities responsible for implementing management strategies and sector-specific implementation plans.[32] In some states, these DMAs are not governed by the water

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full attainment of pollutant surrogates (system potential vegetation, for example) at all locations may not be feasible due to physical, legal or other regulatory constraints." *Id.* at 4-3.

[27] *See, e.g.,* U.S. EPA, Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment §§ 7.2.2, 7.2.4 (2010) (discussing interim basin-wide target load reductions and options at EPA's disposal if 2-year progress milestones are not met, including requiring additional reductions from point sources, and expanding NPDES permit coverage).

[28] In 1999, EPA proposed a new TMDL rule that included provisions related to implementation plans, reasonable assurance requirements, implementation schedules, listing requirements, and scheduling requirements. *See* 64 Fed. Reg. 46012 (Aug. 23, 1999). EPA published it as a final rule in July of 2000. 65 Fed. Reg. 43586 (July 13, 2000). The American Farm Bureau Federation (AFBF) challenged the rule. Am. Farm Bureau Fed'n v. EPA, No. 00-1320, (D.C. Cir. Filed July 18, 2000). Congress refused to appropriate the necessary funds for implementation, many stakeholders cried foul, and then EPA further delayed the effective date of the proposed rule. *See* 66 Fed. Reg. 41817 (Aug. 9, 2001). EPA withdrew the rule in 2003. 68 Fed. Reg. 13608 (March 19, 2003). EPA's withdrawal mooted the AFBF case, leading to its dismissal in 2003.

[29] Pronsolino v. Nastri, 291 F.3d 1123, 1129, 1140 (9th Cir. 2002) (emphasis added).

[30] 40 C.F.R. § 122.44(d)(1)(vii)(B) (emphasis added).

[31] 40 C.F.R. § 122.44(d)(1)(i).

[32] *See* 40 C.F.R. § 130.9(d) (defining DMAs as the agencies that "shall carry out responsibilities specified in Water Quality Management (WQM) plans"); OAR 340-042-0030 (defining DMAs as "a federal, state or local governmental agency that has legal authority over a sector or source contributing pollutants, and is identified as such by the Department of Environmental Quality in a TMDL."); Id. Code 39-3612 (Idaho DEQ relies on DMAs to implement pollution control measures identified in TMDLs, *see* Lower Payette River Subbasin Assessment and TMDLs, § 5.5.3 (2013 addendum)); Wa. Dep't of Ecology, Snoqualmie River Basin Temperature TMDL, at 135 – 149 (2011) (identifying "designated management agencies" for particular types of lands).

quality agency that is responsible for writing TMDLs. Therefore, the requirements contained in the DMA implementation plans are the translation of overall TMDL goals into discrete actions under the jurisdictional control of a particular DMA. Thus, TDML drafters may now deem DMA plans sufficient to begin implementing long-term TMDL water quality improvement objectives. Recent comments submitted by EPA Region 5 regarding Ohio's proposed water quality trading rule amendments reflect this sentiment.[33] That determination should be afforded considerable deference. At any point in the future, states have the discretion to adopt "any requirement respecting control or abatement of pollution[,]"[34]including Baseline requirements that would need to be included in later iterations of DMA implementation plans.

D. Application of Regulatory and TMDL-Derived Baseline Obligations in Participating States

The following examples illustrate how TMDL-Derived Baseline would apply in Idaho, Oregon, and Washington given the states' current regulatory frameworks.

*1. Current TMDL-Derived Baseline Framework for Nonpoint Sources in Oregon*

Oregon DEQ internal guidance states that the "[p]rovisions of the TMDL Implementation Plans for designated management agencies [which are meant to achieve load allocations] would be the Baseline for nonpoint sources."[35] With respect to DMA implementation plans from the Oregon Department of Agriculture, "[i]f [Oregon DEQ] determines that the plan and rules are not adequate to implement the load allocation, the department will provide [the Oregon Department of Agriculture] with comments on what would be sufficient to meet TMDL load allocations."[36] If Oregon DEQ does not make such comments, one can only assume that it has determined that the particulars of the DMA implementation plans are sufficient at this juncture in the long-term TMDL implementation process. Oregon DEQ's determination as to the meaning of its own regulations is afforded substantial deference under state law.[37] Thus, if DMA TMDL implementation plans do not currently require any actions on the particular types of land upon which trading is going to occur, there are no TMDL-

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[33] *See* Ohio EPA, Responsiveness Summary for the Initial Interested Party Draft: Response to Comments on OAC 3745-5-01 to -14, Comment 3: U.S. Environmental Protection Agency, Region 5, at 7 (2012) ("If Ohio EPA establishes a trade, it should track the load allocation reductions and offsets generated by nonpoint sources participating in a trade program. EPA would not prohibit activities that *make progress toward individual load allocations* or the portion of the TMDL for that sector concurrent with reductions that are part of a water quality trade. *A point source may trade with a nonpoint source prior to the nonpoint source achieving its load allocation*. *See* Section D of the *Water Quality Trade Policy* (2003) and *Water Quality Trading Toolkit/or Permit Writers (2007).*") (emphasis added).

[34] 33 U.S.C. § 1370(1)(B).

[35] Oregon DEQ, Water Quality Trading IMD, at 20 (§ 3.1) (2009), *available at* http://www.deq.state.or.us/wq/pubs/imds/wqtrading.pdf.

[36] OAR 340-042-0080(3). The same type of mechanism exists for Oregon DEQ with respect to land governed by the Oregon Forest Practices Act. OAR 340-042-0080(2) ("In areas where a TMDL has been approved, site specific rules under the Forest Practices Act rules will need to be revised if the department determines that the generally applicable Forest Practices Act rules are not adequate to implement the TMDL load allocations.").

[37] "We defer to an agency's interpretation of its own rule if that interpretation is plausible and not inconsistent with the text of the rule, its context, or some other source of law." Tualatin Riverkeepers v. Oregon Dep't of Envtl. Quality, 235 Or. App. 132, 144, 230 P.3d 559 (2010).

Derived Baseline requirements; Baseline at project sites in Oregon would be equal to Net Uplift, less any uplift that is already required by state or local regulations (which vary by region and land type).

*2. Current TMDL-Derived Baseline Framework for Nonpoint Sources in Washington*

The draft Washington guidance on water quality trading states that "[n]onpoint pollution sources receive a load allocation, which establishes the Baseline that must be met before nonpoint credits that may be traded accrue."[38] Similar to the 2003 EPA Trading Policy and the 2007 EPA Permit Writers Toolkit, this policy statement does not state that Baseline is equal to load allocations. However, that does not mean that Washington TMDLs do not create additional requirements or that Ecology cannot promulgate rules to address nonpoint sources. Recent case law confirms that Washington has the authority to regulate nonpoint sources.[39] Therefore, Washington Ecology—the agency responsible for writing TMDLs—is not wholly reliant on other DMAs to implement TMDLs (although it does identify a number of DMAs outside of its purview as responsible entities for implementing some TMDL goals).[40] As such, some requirements that Ecology includes in its TMDLs do not necessarily require the effective participation and action of other DMA entities. Thus, in addition to Regulatory Baseline requirements that may apply at a given site, Washington Ecology also appears to have the authority to create TMDL-Derived Baseline requirements in its TMDL document even if DMA implementation plans do not include any specific Baseline requirements.

*3. Current TMDL-Derived Baseline Framework for Nonpoint Sources in Idaho*

The Idaho DEQ water quality trading guidance states that "[n]onpoint sources create credits by implementing approved best management practices (BMPs) that reduce the amount of pollutant run-off. Nonpoint sources must … provide a *water quality contribution* to ensure a *net environmental benefit*. The water quality contribution also ensures the reduction (the marketable credit), is surplus to the reductions the TMDL assumes the nonpoint source is achieving to meet the water quality goals of the TMDL."[41] Additionally, the guidance document states that "Credits can only be produced using the amount of pollutant reduced beyond a TMDL or permit load requirement."[42] Unlike Washington, Idaho DEQ does not have specific authority to regulate nonpoint sources. Similar to Oregon, Idaho code states that "designated agencies" are responsible for implementing TMDL plans.[43] Thus, if DMA TMDL implementation plans, as well as state and local regulations, do not currently require any

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[38] Washington Dep't of Ecology, Draft Trading Framework Paper for Review and Comment, at 3 (2010), *available at* http://www.ecy.wa.gov/programs/wq/swqs/WQTradingGuidance_1010064.pdf.
[39] *See, e.g.,* RCW 90.48.080 ("It shall be unlawful for any person to throw, drain, run, or otherwise discharge into *any of the waters of this state*) (emphasis added). Washington Dep't of Ecology authority to regulate nonpoint sources under this law was recently upheld by the Washington Supreme Court. Lemire v. Washington, No. 87703-3 (2013).
[40] *See, e.g.,* Wa. Dep't of Ecology, Snoqualmie River Basin Temperature TMDL, at 142–146 (2011) (relying on private forest land owners to follow Forest Practice Rules, on the USFS to implement the TMDL on federal forestlands, on Washington Dep't of Natural Resources to control practices on state forestlands, and on municipalities to enforce local ordinances).
[41] Idaho DEQ, Water Quality Pollutant Trading Guidance, at 13 (2010), *available at* http://www.deq.idaho.gov/media/488798-water_quality_pollutant_trading_guidance_0710.pdf (emphasis added).
[42] *Id.* at 14.
[43] Id. Code §§ 39-3602(9), 39-3612.

actions on particular types of land, Baseline at these project sites is equal to Net Uplift (or in other words, the “water quality contribution” needed to ensure a “net environmental benefit”).

# 2. Determining Baseline & Additionality Requirements

Baseline (the threshold a nonpoint source is required to meet before trading), and additionality (the idea that benefits credited from a project must be in addition to Baseline and the status quo) are two of the most complex aspects of WQT programs. Overall, trading is just one, small—although important—part of a broader, long-term water quality strategy to reduce pollution from point and nonpoint sources. As such, Baseline and additionality policies should be structured in a way that promotes environmentally positive trading outcomes, while also providing room for trading to help a waterbody move toward water quality standard attainment.

The 2003 EPA Trading Policy requires that nonpoint sources meet "Baseline" requirements prior to trading. EPA has stated that "the Baseline for nonpoint sources should be the level of pollutant load associated with existing land uses and management practices that comply with applicable state, local or tribal regulations."[44] Put another way, EPA stated in its Trading Toolkit that Baseline is equal to "the pollutant control requirements that apply to a buyer and seller in the absence of trading."[45] In a basin where there is no TMDL, EPA is clear that Baseline is the applicable state, local and tribal regulations.[46] However, where there is a TMDL, there is a lack of clarity as to how Baseline is calculated at individual project sites. First, this is due in part to varying interpretations of load allocations (LAs). Second, this is influenced by the misperception that the 2003 EPA Trading Policy and the 2007 EPA Trading Toolkit state that Baseline is *equal* to LAs, when in fact they do not. Third, this lack of clarity stems from confusion around time horizons for achieving TMDL objectives versus the thresholds nonpoint source must meet prior to trading. Finally, the sequencing of TMDL implementation is governed by state discretion as to when particular actions are required in order to meet long-term TMDL goals. The legal and policy discussion surrounding these four important points is addressed in the attached Memorandum from The Freshwater Trust on Regulatory and TMDL-Derived Baseline ("Baseline Memo")—which should be read prior to reviewing the below Draft Best Practices on Baseline.

The Draft Best Practices in Section 2.1 discuss the implementation of Regulatory Baseline and TMDL-Derived Baseline in a trading program. In particular, Section 2.1.1 discusses how TMDLs may be implemented and developed so as to allow for easier calculation and implementation of TMDL-Derived Baseline at the site-specific level. Sections 2.1.2-2.2.3 also discusses how phased nonpoint source excess load reduction targets may be incorporated into TMDLs, including details related to implementation timing and sequencing, site-specific reductions and BMPs, and TMDL-Derived Baseline. Section 2.2 outlines several aspects of Regulatory Baseline and TMDL-Derived Baseline implementation at individual project sites, including (2.2.1) programmatic base year for establishing pre-project site conditions, (2.2.2) how Baseline can be expressed, (2.2.3) individual vs. group-level attainment of Baseline requirements, (2.2.4) sequencing of Baseline and credit generating activities, (2.2.7) additionality/business-as-usual at project sites, and (2.2.6) use of cost-share and conservation funding toward meeting Regulatory Baseline requirements.

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[44] EPA, Trading Toolkit, at 5.
[45] *Id.* at 8.
[46] *Id.* at 8

### *2.1 Implementing Baseline in Trading*

Baseline requirements can be derived from TMDL LAs, as well as from regulatory requirements (statutes, rules, ordinances). In reviewing 10+ TMDLs in the Pacific Northwest, EPA approval checklists for over 30 TMDLs, and a number of state-specific laws and regulations, Willamette Partnership and The Freshwater Trust discovered that it is often difficult to determine which Baseline requirements apply at a particular site, and when those requirements apply to sites. Most TMDLs and state/local regulations were not designed with WQT in-mind, and so there is little-to-no guidance as to how to derive Baseline requirements in a way that acknowledges all of the sources of Baseline requirements, while at the same time allowing trades to occur right now.

#### *2.1.1 Implementing/Developing TMDLs so as to Allow for Easier Calculation of TMDL-Derived Baseline*

TMDLs that include different scenarios, different scales or timeframes for applying load reduction targets, and nonpoint source models that are sensitive enough to capture reach or group-of-landowner level changes can help provide the technical basis for setting Baseline requirements for trading. As one develops or revises a TMDL, it is important to consider the following questions as they relate to deriving TMDL-Derived Baselines from LAs:

- How are LAs modeled and completed? Are they given to individual sources, to groups of sources, or just an overall loading amount? Are LAs set to "0"?
- Does language in the TMDL conflate LAs given to nonpoint sources with the responsibility to remedy Excess Load, such that the TMDL-Derived Baseline question becomes unclear?
- Are WLAs made more or less stringent based on nonpoint source controls in the basin?[47]
- How are a TMDL's reasonable assurances defined for meeting LA goals?
- What direction does the TMDL provide for TMDL-implementing agencies in terms of the reductions or types of actions, timing, and sequencing that the water quality agency expects will be included in TMDL implementation plans?

***Draft Best Practice – Considering TMDL-derived baseline requirements**: If trading is considered to be a possibility for meeting water quality goals in a watershed, it should be considered early on in TMDL development. This includes properly defining LAs and Excess Load, and clear statements about the role and timing of trading in implementing those TMDL goals.*

The best practices below are not intended to influence the entire TMDL development process, but to provide some ideas on how to interpret existing TMDLs, as well as how to better consider and prepare for the possibility of trading during the design, revision and implementation of TMDLs in the future.

#### *2.1.2 Designing TMDL LAs to Help Implement TMDL-Derived Baseline at Site-Specific Level*

[47] "If Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs." 40 C.F.R. 130.2(i).

As stated in the 2007 EPA Trading Toolkit, Baseline can and should be "derived from" the overall allowable LA amount in TMDLs. Assuming that LAs are thought of as "allowances" given to nonpoint sources—and not as all Excess Load caused by nonpoint sources—the next question is how to develop meaningful LAs in a TMDL such that implementing agencies can more easily derive Baseline requirements for individual sites. Assigning specific WLAs has been deemed within the authority of EPA,[48] and so doing the same for LAs might help guide TMDL-implementing agencies toward the development of clearer Baseline obligations at the site-specific level. By knowing what amount of loading is generally allowable for a type of source, it may help implementing agencies determine how much loading needs to be addressed in a TMDL implementation plan, and on what timeframe.

***Draft Best Practice – Identifying nonpoint source load****: Many TMDLs establish overall or categorical LA amounts that cannot be easily divided into site-specific amounts. The overall allowable LA amount identified in a TMDL for nonpoint sources can be constructed in at least three ways: 1) as an overall amount provided to all nonpoint sources; 2) as amounts for different nonpoint source sectors; or 3) as amounts given to individual nonpoint source sites (similar to the way WLAs are divided amongst point sources). Regardless of the scale of LAs—overall, sector-specific, or individual sites—TMDLs should explicitly note the amount of load that the TMDL is giving to nonpoint sources so that the site-specific Baseline inquiry is not complicated by uncertainty and ambiguity.*

**Commentary**: Unlike WLAs, LAs are not typically divided between all sources in the watershed, and so the LA amount included in the TMDL is typically cumulative for all nonpoint sources. If a TMDL is written such that it can be interpreted as requiring all nonpoint source contributors to collectively achieve the watershed LA before a credit may be generated (as would be required under the "Excess Load" approach), the majority of trading opportunities would be eliminated.49 If possible, TMDLs should identify specific loading amounts that nonpoint sources can discharge. However, if TMDL drafters cannot do so, the TMDL should clearly state that certain (or all) nonpoint sources receive a "0" load allocation.

### *2.1.3 Establishing Phased Nonpoint Source Excess Load Reduction Targets in a TMDL: Implementation Timing and Sequencing, Site-Specific Reductions and BMPs, and TMDL-Derived Baseline*

In addition to clearly identifying the allowable discharges given to nonpoint sources, a TMDL may provide important guidance as to the timing and sequencing of more stringent TMDL-Derived Baseline requirements, among other requirements aimed at improving a waterbody's health over the

[48] American Farm Bureau Fed'n v. U.S. EPA, No. 1:11-CV-0067, at *55 (M.D. Pa. 2013) ("To merely set a number, and then let the states, permit writers, and other groups within each state "duke it out" would not only be impractical, but would also be inconsistent with the CWA's foundational principle, which is that the burdens of eliminating pollution in the Nation's water is one to be shared among federal, state, and local authorities.") (citing Anacostia Riverkeeper v. Jackson, 798 F.Supp.2d 210, 250 (D.D.C. 2011)).

[49] *See* Montana DEQ, Response to Comments on Montana's Draft Policy on Nutrient Trading, at 1, Comment 2 Response (2011), *available at* http://deq.mt.gov/wqinfo/NutrientWorkGroup/PDFs/DraftTradingPolicyRespComm10_11.pdf ("Defining 'Baseline' so that all nonpoint source contributors need to achieve (collectively) the watershed load allocation before a credit may be generated would eliminate the majority of trading opportunities and greatly reduce the effectiveness of this policy.").

longer term. Currently, many TMDLs lack clarity as to when desired future conditions will be attained, and what sequence of actions (and when) will be necessary to reasonably assure progress toward water quality standards over the longer-term. This often leads to difficulty in TMDL implementation, and confusion as to which entity is going to address what amount of the problem, and by when. As a result of this lack of specificity, long-term optimal conditions are sometimes assumed to be current requirements that must be met now prior to generating credits.

TMDLs may, however, provide specific direction as to what water quality objectives should be met, and when. Some states rely on state law provisions to include such deadlines.[50] The CWA requires that TMDLs "shall be established at a level necessary to implement the applicable water quality standards [,]"[51] but it does not require that TMDLs be completely implemented within a specific timeframe (unlike technology-based effluent limit standards[52]). The CWA thus provides TMDL drafters the authority to establish a series of phased nonpoint source reduction goals in TMDLs, as well as the authority to identify appropriate Baseline requirements at various intervals throughout the TMDL implementation period (which may stretch over decades).

***Draft Best Practice – Establishing Phased Nonpoint Source Excess Load Reduction Targets in a TMDL:*** *TMDLs often identify desired future conditions after full implementation of a TMDL. Although TMDLs may specify a series of watershed-wide nonpoint source reduction goals—including TMDL-Derived Baseline—aimed at moving a watershed toward attainment of water quality standards over time, many TMDLs do not effectively translate desired future condition to current site-specific requirements. This lack of translation makes it difficult for TMDL implementing agencies to derive appropriate site-specific Baseline (and the sequencing of those Baseline amounts over time), and to judge the efficacy of designated management agency implementation plans.*

*TMDLs should specify the reductions or types of BMPs, timing, and sequencing that the relevant water quality agency expects will be included in TMDL implementation plans. As it relates to trading, the agency should provide clear direction as to when it expects those goals to become TMDL-Derived Baseline requirements at particular types of sites, although caution should be taken not to convert TMDL nonpoint source reduction goals into site-specific Baseline requirements too quickly, or at too high a level, or else trading may quickly become cost prohibitive for point sources. This direction would provide designated management agencies*

[50] *See, e.g.,* RCW 90.48.080 ("It shall be unlawful for any person to throw, drain, run, or otherwise discharge into *any of the waters of this state*) (emphasis added). Washington Dep't of Ecology authority to regulate nonpoint sources under this law was recently upheld by the Washington Supreme Court. Lemire v. Washington, No. 87703-3 (2013). Likewise, all dischargers are subject to regulation under California state law. Cal. Water Code § 13260(a)(1). On the other hand, the federal CWA definition of "point source" specifically excludes "agricultural stormwater discharges and return flows from irrigated agriculture." 33 U.S.C. § 1362(14).

[51] 33 U.S.C. § 1313(d)(1)(C).

[52] *See* 33 U.S.C. § 1311(b). TMDL-based targets are not constrained by the shorter timeframes associated with meeting the technological goals of the CWA. Longview Fibre Co. v. Rasmussen, 980 F.2d 1307 (9th Cir. 1992) (noting that "the 'timetable for achievement of objectives' limitations of section 1311 do not apply to section 1313 TMDL effluent limitations"); NEDC v. Oregon DEQ, No. 9905-05144, 2000 WL 35562955, at *17 (D. Or. 2000) ("section 1311 compliance deadlines do not apply to section 1313 TMDL's").

*with the information necessary to include appropriate Baseline requirements in their implementation plans, and the public with clear guideposts for assessing TMDL implementation progress.*

*An evaluation of progress should be conducted at defined intervals in the TMDL to assess progress toward meeting pollution reduction targets and make adjustments as needed. If watershed-wide nonpoint source reduction goals are not met, TMDLs could be written such that other actions are triggered. For example, 1) TMDLs could reduce point source WLAs on a schedule; 2) TMDLs could reallocate the human use allowance in a more restrictive way; or 3) states could more heavily regulate nonpoint sources.*

**Commentary**: Over time, a TMDL could require nonpoint source reduction goals in order to move a waterbody toward attainment of water quality standards. EPA has discussed this possibility in the Chesapeake Bay TMDL, specifically calling for a schedule of reduced allocations to point sources depending on whether nonpoint sources obtain particular reduction goals.[53] Florida law regarding TMDLs also provides space for phased TMDL implementation.[54] In the Shelter Island TMDL (San Diego), the California Regional Water Quality Control Board set phased reduction goals for various types of copper polluting sources over a seventeen-year period (a two-year orientation, followed by three five-year reduction phases).[55] The Shelter Island TMDL does not appear to reallocate responsibility among different categories of sources if particular source categories are unable to meet their interim reduction goals. Careful consideration should occur prior to imposing stricter limits on point source categories based on the non-compliance of nonpoint source categories. In watersheds where point sources are the major contributors of pollution, phased reduction goals (and phased increases in Baseline requirements) may be less appropriate. In those cases, strategies that reduce point source pollution faster may be more desirable.

Challenges with phased nonpoint source reduction goals in the TMDL include: A) setting reasonably achievable milestones at specific time intervals as part of a TMDL process is likely time-consuming and complex, and would require more extensive TMDL implementation planning that is based on reasonable adoption rates/supply chain development, enforcement capacity, and the ability to track progress against goals; B) LA, WLA, and HUA values in the TMDL may need to be adjusted in the future based on actual achievement of reduction milestones (which also might raise questions of equity from point sources if they are forced to carry more of the excess load problem should nonpoint sources fail to perform[56]); and C) point sources that would consider investing in green

[53] EPA, Chesapeake Bay TMDL, at § 7 (2010).

[54] Florida Statutes § 403.067(7)(a)(1) ("In developing and implementing the TMDL for a water body, the department … may develop a basin management action plan that addresses some or all of the watersheds and basins tributary to the water body. Such plan … *may provide for phased implementation of these management strategies to promote timely, cost-effective actions as provided for in s. 403.151*") (emphasis added).

[55] California Regional Water Quality Control Board, San Diego Region, Resolution No. R9-2005-0019, at 3-4 (2005), *available at* http://www.waterboards.ca.gov/sandiego/water_issues/programs/watershed/docs/swu/shelter_island/2005_0019.pdf.

[56] The statute and regulations do not discuss equitable considerations, but recent case law discussing TMDL implementation has noted this as an important consideration. *See* Am. Farm Bureau Fed'n v. U.S. E.P.A., No. 11-CV-0067, 2013 WL 5177530, at *35 (M.D. Pa. 2013) (discussing the equitable distribution of the burden of reducing pollutant loads and questioning the practicality of "pin[ning] the hopes of attaining the statutorily-mandated goal of achieving water

infrastructure may have an incentive to instead choose a known and statically-priced grey technology option if they know they may have to pay for more credits over time (especially if tighter point source control is dependent on nonpoint source achievement of reduction goals). For some point sources, a phased Baseline may therefore create the additional uncertainty that it may still need to install technology at some point in the future because the cost of trading will become prohibitive and uncertain. This may be of particular concern for some of the smaller wastewater utilities that may not have the financial flexibility or incentive to invest in credits that may be used for just one credit cycle (e.g., if the buyer reverts to a technological solution in a later permit cycle because that option becomes cheaper than purchasing more credits).

On the other hand, increases in TMDL-Derived Baseline levels (based on guidance from TMDL reduction goals) could incentivize both point and nonpoint sources to engage in trading at an earlier juncture because they are able to create more credits. In contrast, a project generating credits at a later point may have to retire more credits or install more BMPs in order to meet Baseline requirements. Nonpoint sources who are not currently capable of trading due to other land encumbrances or obligations may be forced to retire a larger percent of their credits as a pre-requisite to trading.

Ultimately, states and EPA would need to develop and use systems that track and review progress toward TMDL goals in quantifiable terms throughout the watershed. Regulators need a robust set of data to identify appropriate adaptive management actions, and to determine whether it is necessary to change water quality standards or use designations. Thus, this approach requires development of systems to track and account for the reductions that nonpoint sources achieve over time.

### *2.2 Details Related to Regulatory Baseline and TMDL-Derived Baseline at Individual Project Sites*

This section discusses: (i) programmatic base year for establishing pre-project site conditions, (ii) how Baseline can be expressed, (iii) individual vs. group-level attainment of Baseline requirements, (iv) sequencing of Baseline and credit generating activities, (v) additionality/business-as-usual at project sites, and (vi) use of cost-share and conservation funding toward meeting Regulatory Baseline requirements. These principles generally apply in both the Regulatory Baseline and TMDL-Derived Baseline contexts.

#### *2.2.1 Establishing Programmatic Base Year for Calculating Net Uplift at Project Sites*

***Draft Best Practice – Trading program base year**: Pre-project site conditions should be documented for each project in order to calculate Net Uplift. This "base year" may be set as the date a landowner enrolls in the trading program. However, if a trading program seeks to reward early action, the program may approve a "look back period" that establishes base year as the date the TMDL is issued, or the date a trading program is approved. If the base year is a point in the past, projects completed between the base year and the inception of the trading program must demonstrate conformity with all trading program requirements in order to be eligible to sell credits.*

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quality standards on the three tidal states [and not recognizing the impacts of upstream states] would not only be inequitable, but also impractical and likely impossible.").

**Commentary**: Trading programs vary as to the date after which implemented BMPs become eligible to generate credits (i.e., the "base year"). The easiest and most straight-forward approach to base year is to establish pre-project site conditions at the time an individual landowner enrolls in an approved trading program.

The other options address circumstances in which landowners may have implemented beneficial practices prior to the beginning of a trading program, and now seek to sell those credits to buyers participating in the trading program. Programs may thus "look back" to a prior date as the base year.

One look-back approach involves counting only those BMPs installed after the effective establishment of a trading program in the watershed. This approach may disincentivize early adoption of BMPs (e.g., farmers may choose not to implement or continue BMPs leading up to a new TMDL or renewed NPDES permit with trading included, hoping instead to implement those practices once the trading program is in place to generate credits). Another approach is to look back to the year a TMDL was implemented, and set that as the base year. A look-back period can maintain the incentive for early BMP adoption by allowing documented improvements in practices to generate credits when they are implemented within a fixed number of years of a trading program's establishment. The Ohio Basin program uses this approach.[57] Moreover, Maryland allows credit generation for any non-structural BMP implemented on an annual cycle (e.g., cover crops), even if that BMP was used prior to signing a TMDL.[58] This approach is intended to prevent landowners from stopping beneficial practices as a way to generate more credits. This approach is simple if the TMDL was recently published, but is less desirable if the TMDL was approved a number of years prior. On the other hand, this approach may provide the appearance that credit purchasers are simply buying restoration that already occurred, but that is now being repackaged as a "trading" solution. Moreover, there is concern that this approach may not produce new, additional benefits.

### *2.2.2 Expressing Baseline Requirements*

***Draft Best Practice – Expressing baseline requirements****: Baseline requirements can be expressed as A) an extra amount of load that must be reduced by a nonpoint source at a site (expressed as a % of the total overall load, or as a numeric amount); B) as a total amount of extra credits that must be purchased by a point source; or C) a minimum set of BMPs or actions that must be installed at a site. The expression of Baseline should be outlined in regulations, the permit and/or the TMDL, to the extent possible.*

**Commentary**: Baselines are expressed in a variety of ways across trading programs because they draw from a variety of state and local regulations, and sometimes from TMDLs. Some programs

[57] *See* EPRI, Pilot Trading Plan 1.0 for the Ohio River Basin Interstate Water Quality Trading Project, App. E-4, § 4.B (2009), *available at* http://wqt.epri.com/pdf/ORB%20Trading%20Plan%208-1-12%20final.pdf (noting 3-year look-back period for establishing Baseline conditions for agricultural nonpoint source credit generators).

[58] *See* Maryland Dep't of Agriculture, Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed, Phase II – A Guidelines for the Generation of Agricultural Nonpoint Nutrient Credits, at 11 (draft 2008) ("Credits can be generated from agronomic nutrient reduction practices, that do not count towards the baseline requirements, Agronomic practices reduce or minimize surface, groundwater or air emissions, such as; manure injection, reductions in nitrogen fertilizer application, precision agriculture, cover crops, no-till, etc. These are considered an annual practice for the year they are generated, regardless of what year the practices were first initiated.").

require the adoption of a minimum set of BMPs (e.g., a farm plan or filter strips) prior to allowing a nonpoint project to generate credits, whereas other programs require nonpoint sources to generate a percentage of pollution reduction (e.g., 20% reduction in nutrient loading) prior to allowing that nonpoint source to sell credits. Following are the pros (+) and cons (-) associated with different expressions of Regulatory Baseline.

- *"Technology-Based" (Minimum BMP(s) as Baseline)*: Virginia,[59] Pennsylvania,[60] and Colorado[61] express Baseline this way:
    - (+) BMPs are implemented at all sites where trading is to take place. This works well when required BMPs are defined in TMDL implementation plans and/or state law/regulations, where BMP efficiency is consistent throughout the watershed, and adoption is likely;
    - (+) Rewards landowners who have already taken beneficial action in that Baseline may have already been met for those landowners;
    - (+) Ensures that important, but otherwise costly, BMPs are implemented rather than just the most cost-effective or easy to implement BMPs;
    - (-) Requires installation of standard BMPs at all project sites, regardless of unique site characteristics, or the actual benefit that BMP will generate at a site;
    - (-) Can reduce flexibility for farmers to design BMPs to reduce pollution and meet the needs of their operations; and
    - (-) Time-consuming and subjective to identify and track minimum BMP installation and performance thresholds at each project site (would require significant on-the-ground resources that may prove a hindrance to scaling programs).
- *"Performance-Based" (% Load Reduction Target at a Nonpoint Source Site as Baseline)*: Maryland and Pennsylvania express Baseline this way in guidance and regulations, respectively.[62]
    - (+) Since reduction targets are in the same units as TMDLs, it is easier to track progress from WQT in the same metrics and targets as used to develop TMDLs;
    - (+) When quantifying credits from site, it is easier to separate Baseline from additional credits (otherwise, the analysis must include calculating/modeling impacts of each Baseline BMP at each site—which has potentially significant resource impacts on permittees and project developers);

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[59] Virginia Dep't of Environmental Quality, Trading Nutrient Reductions from Nonpoint Source Best Management Practices in the Chesapeake Bay Watershed: Guidance for Agricultural Landowners and Your Potential Trading Partners, at 3–5, *available at* http://www.deq.virginia.gov/Portals/0/DEQ/Water/PollutionDischargeElimination/VANPSTradingManual_2-5-08.pdf ("You are presumed to meet the baseline level of nutrient reduction if you implement all the following BMPs that are applicable to your operation" including soil conservation, nutrient management, cover cropping, livestock stream exclusion, riparian buffer installation).

[60] Pa. Code ch. 96.8(d)(3)(A)-(B).

[61] Among other options, the Colorado policy lists implementation of BMPs as a mechanism for satisfying nonpoint sources baseline. *See* Colorado Dep't of Public Health and Environment, Water Quality Control Division, Pollutant Trading Policy § VIII (2004).

[62] Pa. Code ch. 96.8(d)(3)(C) (requiring nonpoint sources to either install certain minimum BMPs, or create an additional 20% reduction prior to being able to sell credits); Maryland Dep't of the Environment., Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed, § 4.1 (2008) ("The Department will require a 5% retirement ratio applied to each point-source generated credit. This ratio may be adjusted over time.").

- (+) Provides more flexibility to project developers/credit generators in how they achieve pollution reductions. Quantifiable targets are more certain because the amount to pay or credits to produce is a known extra increment;
- (+) Expression in quantifiable amounts allows for easier connection of reductions back to targets in the TMDL;
- (+) Expression at the nonpoint source site level suggests that individual nonpoint source project developers are making contributions to Baseline requirements (thus reinforcing the notion that nonpoint sources are carrying their fair share of the burden);
- (-) High priority BMPs may not be implemented in favor of BMPs with the lowest cost per unit of the target pollutant removed; and
- (-) Using absolute load amounts may introduce issues of equity because it may be far easier for "late adopters" to meet the required reduction than "early adopters" who have already taken actions. The Chesapeake TMDL is somewhat unique in that it sets specific load reduction targets by reach, supporting a percent reduction approach to Baseline.[63]

- % Load Reduction Target for Overall Trading Program as Baseline:
  - (+) May be easier to quantify Baseline obligation for purchasing point source entity (e.g., express as an extra % of the overall reduction amount being purchased).
  - (-) Expression at the nonpoint source site level suggests that individual nonpoint source project developers are making contributions to Baseline requirements, but this nexus is lost if expressed as a watershed-wide goal.

### *2.2.3 Individual vs. Group-Level Attainment of Baseline Requirements*

***Draft Best Practice – Use of individual or group-level baseline requirements**: An individual project developer should be able to generate credits upon meeting his/her own Baseline requirements, independent of the actions of neighboring landowners in the relevant watershed. Where possible, trading programs should incentivize grouped implementation of BMPs in a watershed (e.g., through reduced ratios for collective action, increased availability of cost share to meet Baseline, etc.).*

**Commentary**: In a review of trading programs around the Chesapeake, many programs allow individual landowners to generate credits when their individual Baseline requirements have been met64. It may not be fair to predicate credit-generation eligibility (i.e., Baseline requirements) on the willingness of all proximate landowners to participate in a program. Nonetheless, although required group action may create barriers to entry, it may make sense to incentivize group action as much as possible via mechanisms such as reduced trading ratios and Baseline requirements, and/or additional access to cost share funding.

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[63] U.S. EPA, Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment § 9.1 (2010), *available at* http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/FinalBayTMDL/CBayFinalTMDLSection9_final.pdf (noting load reduction targets for all 92 Chesapeake Bay segments); *id.* at App. Q, *available at* http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/FinalBayTMDL/AppendixQ_AnnualTMDLs_final.xls (providing detailed annual WLAs and LAs).

[64] *See* World Resources Institute, Comparison Tables of State Nutrient Trading Programs in the Chesapeake Bay Watershed, at 11, Tbl. 7 (2011), *available at* http://pdf.wri.org/factsheets/comparison_tables_of_state_chesapeake_bay_nutrient_trading_programs.pdf.

### *2.2.4 Sequencing of Baseline and Credit Generating Activities*

***Draft Best Practice – Sequencing of meeting baseline requirements**: Project developers can meet their Baseline requirements simultaneous to generating credits.*

**Commentary**: Project developers can meet their Baseline requirements simultaneously with the actions needed to generate credits (as opposed to first implementing the BMPs to meet Baseline and then later implementing the BMPs to generate credits). For example, this would allow a project developer to implement a set of BMPs that both meet and go beyond Baseline to generate credits.

### *2.2.5 Additionality and Business-as-Usual at Project Sites*

***Draft Best Practice – Business-as-usual**: Baseline requirements address many of the concerns regarding additionality. Some trading programs may choose to define more criteria to ensure creditable projects are going beyond "business-as-usual" (e.g., not counting BMPs that are already customary to the industry, or that were already planned because of immediate cost savings for the operator).*

**Commentary:** Business-as-usual criteria for determining additionality are intended to prevent credits from being generated from actions that would have occurred without trading because they are a part of industry norms or because they represent sufficient cost savings to the landowner such that the landowner would be incentivized to implement a BMP without trading. In WQT programs, Baseline requirements may more than cover "business as usual" criteria. Business-as-usual definitions could be established for particular watersheds within a TMDL. Using business-as-usual criteria to determine additionality can be difficult to define, track and verify.

### *2.2.6 Use of Public Dollars Dedicated to Conservation to Satisfy Baseline Requirements*

***Draft Best Practice – Allowable funding sources to meet baseline requirement**: Project developers may use public dollars dedicated to conservation or any other source of funding to help meet Baseline requirements or other watershed-wide nonpoint source reduction goals in the TMDL. Where public dollars dedicated to conservation are used, the amount and purpose of those funds need to be disclosed as part of the credit issuance process. Actions funded with "public dollars dedicated to conservation" may not be used to generate credits for compliance.*

**Commentary**: Many programs allow for the use of public funds dedicated to conservation (defined in Section 6.3 of the Draft Best Practices) to meet Baseline requirements.[65] Cost share funds such as federal Farm Bill programs, EPA section 319 grants, and state sources are routinely used to help nonpoint sources reduce pollution and meet conservation goals. USDA regulations appear to allow its funds to be used to meet Baseline or other requirements.[66] If public cost share is used to meet Baseline, that information should be available so the credit buyers, agencies, and others may verify

[65] *See id.* (noting that Maryland, Pennsylvania, Virginia and West Virginia allow cost-share funds to meet Baseline).
[66] *See, e.g.,* 7 C.F.R. § 1466.36 ("NRCS recognizes that environmental benefits will be achieved by implementing conservation practices funded through EQIP, and environmental credits may be gained as a result of implementing activities compatible with the purposes of an EQIP contract."); 7 C.F.R. § 1410.63 (similar provision for CRP).

that public dollars dedicated to conservation are being used to meet Baseline only and not to generate credits.